PATENT APPLICATION
Mo-6000
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF)
)
MARTIN ADAMCZEWSKI et al.)
)
SERIAL NUMBER: TO BE ASSIGNED)
)
FILED: HEREWITH)
)
TITLE: NUCLEIC ACIDS ENCODING)
NEW INSECT ACETYLCHOLINE)
RECEPTOR ß SUBUNITS)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington D.C. 20231

Sir:

Upon the granting of a Serial Number and Filing date and prior to the examination of the subject application, kindly amend the application as follows.

IN THE SPECIFICATION

On page 1, between lines 6 and 7, please insert -- BACKGROUND OF THE INVENTION --.

On page 3, before line 14, please insert -- BRIEF SUMMARY OF THE INVENTION --.

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I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231

Dorothy P. Colangelo
(Name of person mailing paper or fee)
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Signature of person mailing paper or fee)

On page 3, before line 30, please insert -- DETAILED DESCRIPTION OF THE INVENTION --.

On Page 13, line 15, please delete "Information on" and insert -- Description of --.

On page 21, line 1, please delete "Patent Claims" and insert -- What is claimed is --.

IN THE CLAIMS

Please cancel Claims 1 - 22.

Please add Claims 23 - 44.

-- 23. An isolated and purified nucleic acid comprising a sequence selected from the group consisting of:

(a) the sequence of SEQ ID NO: 1,

(b) subsequences of the sequence defined under (a) which are at least 14 basepairs in length,

(c) sequences which hybridize with the sequence defined under (a),

(d) sequences which have at least 70% identity to the sequence between position 43 and position 1368 of the sequence defined under (a),

(e) sequences which are complementary to the sequence defined under (a), and

(f) sequences which, owing to the degeneracy of the genetic code, encode the same amino acid sequence as do the sequences defined under (a) to (d).

24. A vector comprising an isolated and purified nucleic acid molecule selected from the group consisting of:

(a) the sequence of SEQ ID NO: 1,

(b) subsequences of the sequence defined under (a) which are at least 14 basepairs in length,

(c) sequences which hybridize with the sequence defined under (a),

(d) sequences which have at least 70% identity to the sequence between position 43 and position 1368 of the sequence defined under (a),

(e) sequences which are complementary to the sequence defined under (a), and

(f) sequences which, owing to the degeneracy of the genetic code, encode the same amino acid sequence as do the sequences defined under (a) to (d).

25. The vector of Claim 24, wherein said nucleic acid molecule is functionally linked to regulatory sequences which ensure expression of the nucleic acid in prokaryotic or eukaryotic cells.

26. A host cell stably transfected or transformed with a nucleic acid selected from the group consisting of

(a) the sequence of SEQ ID NO: 1,

(b) subsequences of the sequence defined under (a) which are at least 14 basepairs in length,

(c) sequences which hybridize with the sequence defined under (a),

(d) sequences which have at least 70% identity to the sequence between position 43 and position 1368 of the sequence defined under (a),

(e) sequences which are complementary to the sequence defined under (a), and

(f) sequences which, owing to the degeneracy of the genetic code, encode the same amino acid sequence as do the sequences defined under (a) to (d),

or a vector according to Claim 24.

27. The host cell of Claim 26 wherein the vector comprises a nucleic acid molecule which is functionally linked to regulatory sequences ensuring expression of the nucleic acid in prokaryotic or eukaryotic cells.

28. The host cell of Claim 26, wherein said host cell is a prokaryotic or eukaryotic cell.

29. The host cell of Claim 28, wherein the prokaryotic cell is E. coli.

30. The host cell of Claim 26, wherein the eukaryotic cell is a mammalian or insect cell.

31. A polypeptide encoded by a nucleic acid according to Claim 23.

32. A polypeptide exerting the biological function of an acetylcholine receptor subunit and comprising an amino acid sequence having at least 40% identity to the sequence of SEQ ID NO: 2.

33. An acetylcholine receptor comprising a polypeptide encoded by a nucleic acid of Claim 23 or a polypeptide exerting the biological function of an acetylcholine receptor subunit and comprising an amino acid sequence having at least 40% identity to the sequence of SEQ ID NO: 2.

34. A method of producing a polypeptide of Claims 31 or 32, comprising:

(a) culturing a host cell of Claim 26 under conditions which ensure expression of the nucleic acid of Claim 23, and

(b) obtaining the polypeptide from the cell or the culture medium.

35. An antibody reacting specifically with the polypeptide selected from the group consisting of a polypeptide encoded by the nucleic acid of Claim 23, a polypeptide exerting the biological function of an acetylcholine receptor subunit and comprising an amino acid sequence having at least 40% identity to the sequence of SEQ ID NO: 2, and an acetylcholine receptor comprising a polypeptide encoded by a nucleic acid of Claim 23 or a polypeptide exerting the biological function of an acetylcholine receptor subunit and comprising an amino acid sequence having at least 40% identity to the sequence of SEQ ID NO: 2.

36. A transgenic invertebrate stably transfected or transformed with a nucleic acid according to Claim 23.

37. The transgenic invertebrate of Claim 36, wherein said transgenic invertebrate is Drosophila melanogaster or Caenorhabditis elegans.

38. A method of generating a transgenic invertebrate comprising the steps of stably transfecting or transforming said transgenic invertebrate by introducing a nucleic acid selected from the group consisting of the nucleic acid of Claim 23, a vector comprising the nucleic acid of Claim 23, and a vector comprising the nucleic acid of Claim 23 operatively linked to regulatory sequences ensuring the expression of the nucleic acid in prokaryotic or eukaryotic cells.

39. A transgenic progeny of a transgenic invertebrate according to Claim 36 or 37.

40. A method of generating a nucleic acid according to Claim 23, comprising the steps selected from:

(a) synthesizing the nucleic acid of Claim 23 by full chemical synthesis in a manner known per se,

(b) synthesizing oligonucleotides by chemical synthesis, labeling the oligonucleotides, hybridizing the oligonucleotides with DNA of an insect cDNA library, selecting positive clones and isolating the hybridizing DNA from positive clones, and

(c) synthesizing oligonucleotides by chemical synthesis and amplification of the target DNA by PCR.

41. A regulatory region controlling in insect cells the transcription of a nucleic acid according to Claim 23 and ensuring its expression.

42. A method of finding new active compounds altering the conductive properties of receptors according to Claim 33 for crop protection or pharmaceutical active compounds for the treatment of humans, comprising the steps of:

(a) providing a host cell according to Claim 26,

(b) culturing the host cell in the presence of a compound or of a mixture of compounds, and

(c) detecting altered conductive properties.

43. A method of finding a compound binding to the receptor of Claim 33, comprising the steps of:

(a) contacting a host cell, polypeptide, or receptor selected from:

- a host cell of Claim 26,
- a polypeptide according to Claim 31 or 32, and
- a receptor according to Claim 33,

with a compound or a mixture of compounds under conditions which allow the interaction of at least one compound with the host cell, the polypeptide or the receptor, and

(b) determining the compound(s) which bind(s) specifically to the receptors.

44. A method of finding compounds which alter the expression of the receptor of Claim 33, comprising the steps of:

(a) contacting a host cell according to Claim 26 or a transgenic invertebrate according to Claim 36 with a compound or a mixture of compounds,

(b) determining the receptor concentration, and

(c) determining the compound(s) which specifically affect(s) receptor expression. --

REMARKS

The Claims have been cancelled and rewritten in a form more commonly used for US filing. Multiple dependencies have been eliminated and dependent claims have been rewritten to incorporate all of the limitations of the independent claims from which they depend. Original Claim 22 has been cancelled and not rewritten.

An action on the merits is respectfully requested.

Respectfully submitted,

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